AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A carrier-phase-based relative positioning device, comprising:

~~a plurality of~~ at least two antennas mounted on a mobile vehicle or on a mobile vehicle and at a fixed location, one of said antennas being specified as a reference antenna; and

means for estimating an integer ambiguity and a baseline vector from a result of observation of a single phase difference or a double phase difference based on radio waves transmitted by a plurality of position satellites and received by said antennas[[;]],

wherein a new integer ambiguity is estimated from the previously estimated baseline vector or integer ambiguity when the number of positioning satellites has changed or when the reference ~~antenna~~ position satellite has been switched.

2. (Currently Amended) The carrier-phase-based relative positioning device according to claim [[1]] 17, wherein when the number of positioning satellites has increased, the new integer ambiguity estimated only from said baseline vector estimated before the number of positioning satellites has increased.

3. (Currently Amended) The carrier-phase-based relative positioning device according to claim [[1]] 17, wherein when the number of positioning satellites has decreased, the integer ambiguity after the reduction in the number of positioning satellites is estimated by excluding an estimated value of the integer ambiguity derived from the positioning satellite which [[as]] has become unobservable.

4. (Currently Amended) The carrier-phase-based relative positioning device according to claim [[1]] 17, wherein the double phase difference is used for estimating the integer ambiguity and, when the reference ~~antenna~~ position satellite has been switched, the integer ambiguity after the switching of the reference ~~antenna~~ position satellite is estimated by using a difference operation method in response to the reference ~~antenna~~ position satellite switching.

5. (Currently Amended) The carrier-phase-based relative positioning device according to one of claims [[1]] 2 to 4 or 17, ~~further comprising means for verifying and determining the integer ambiguity,~~ wherein said means for verifying and determining the integer ambiguity determines the integer ambiguity when the reliability of the integer ambiguity has been verified a specific number of times from its successively detected estimated values.

6. (Currently Amended) The carrier-phase-based relative positioning device according to one of claims [[1]] 2 to 4 or 17, ~~further comprising means for verifying and determining the integer ambiguity,~~ wherein said means for verifying and determining the integer ambiguity determines the integer ambiguity when the same estimated value of the integer ambiguity has been successively detected a specific number of times.

7. (Currently Amended) The carrier-phase-based relative positioning device according to claim [[1]] 17, wherein said positioning device uses a Kalman filter for estimating a floating ambiguity and the baseline vector from which the integer ambiguity is determined.

8. (Currently Amended) The carrier-phase-based relative positioning device according to claim [[1]] 17, wherein said means for estimating and determining the integer ambiguity based on a floating ambiguity uses lambda notation.

9. (Currently Amended) A method to determine a relative position of a device that includes ~~a plurality of~~ at least two antennas mounted on a mobile vehicle or on a mobile vehicle and at a fixed location, one of said antennas being specified as a reference antenna, the method comprising:

estimating an integer ambiguity and a baseline vector from a result of observation of a single phase difference or a double phase difference based on radio waves transmitted by a plurality of position satellites and received by said antennas,

wherein a new integer ambiguity is estimated from the previously estimated baseline vector or integer ambiguity when the number of positioning satellites has changed or when the reference ~~antenna~~ position satellite has been switched.

10. (Currently Amended) The method of claim [[9]] 18, wherein when the number of positioning satellites has increased, said estimating step includes estimating the new integer ambiguity only from the baseline vector estimated before the number of positioning satellites has increased.

11. (Currently Amended) The method of claim [[9]] 18, wherein when the number of positioning satellites has decreased, said estimating step includes estimating the new integer

ambiguity by excluding an estimated value of the integer ambiguity derived from the positioning satellite which [[as]] has become unobservable.

12. (Currently Amended) The method of claim [[9]] 18, wherein the double phase difference is used for estimating the integer ambiguity and, when the reference ~~antenna~~ position satellite has been switched, said estimating step includes estimating the integer ambiguity by using a difference operation method in response to the reference ~~antenna~~ position satellite switching.

13. (Currently Amended) The method of claims [[9]] 10 to 12 or 18, ~~further comprising a step of~~ wherein the verifying and determining the integer ambiguity [[by]] further comprises determining the integer ambiguity when the reliability of the integer ambiguity has been verified a specific number of times from its successively detected estimated values.

14. (Currently Amended) The method of claims [[9]] 10 to 12 or 18, ~~further comprising a step of~~ wherein the verifying and determining the integer ambiguity [[by]] further comprises determining the integer ambiguity when a same estimated value of the integer ambiguity has been successively detected a specific number of times.

15. (Currently Amended) The method of claim [[9]] 18, wherein said estimating step includes using a Kalman filter for estimating a floating ambiguity and the baseline vector from which the integer ambiguity is determined.

16. (Currently Amended) The method of claim [[9]] 18, wherein said estimating step includes using a lambda notation when determining the integer ambiguity based on a floating ambiguity.

17. (New) The carrier-phase-based relative positioning device according to claim 1, further comprising a means for verifying and determining said integer ambiguity.

18. (New) The method according to claim 9, further comprising verifying and determining the integer ambiguity.

19. (New) The carrier-phase-based relative positioning device according to claim 1, wherein when the number of positioning satellites has increased, the new integer ambiguity is estimated only from said baseline vector estimated before the number of positioning satellites has increased.

20. (New) The carrier-phase-based relative positioning device according to claim 1, wherein when the number of positioning satellites has decreased, the integer ambiguity after the reduction in the number of positioning satellites is estimated by excluding an estimated value of the integer ambiguity derived from the positioning satellite which has become unobservable.

21. (New) The carrier-phase-based relative positioning device according to claim 1, wherein the double phase difference is used for estimating the integer ambiguity and, when the reference

position satellite has been switched, the integer ambiguity after the switching of the reference position satellite is estimated by using a difference operation method in response to the reference position satellite switching.

22. (New) The carrier-phase-based relative positioning device according to claim 1, wherein said positioning device uses a Kalman filter for estimating a floating ambiguity and the baseline vector from which the integer ambiguity is determined.

23. (New) The carrier-phase-based relative positioning device according to claim 1, wherein said means for estimating and determining the integer ambiguity based on the floating ambiguity uses lambda notation.